

Attorney's Docket: 2001DE454

Serial No.: 10/500,025

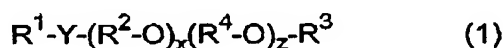
Response to Notice of Non-Compliant Amendment mailed March 11, 2005

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) An aqueous plant protection formulation comprising

i) at least one polymer ~~which can be prepared by radical~~ copolymerization of

- A) acrylamidopropylmethylenesulfonic acid (AMPS) and/or its salts;
- B) one or more macromonomers according to formula (1)



in which

R^1 is a vinyl, allyl, acryloyl, methacryloyl, seneciroyl or crotonyl residue;

R^2 and R^4 are, independently of one another, (C_2-C_4) -alkylene;

x and z are, independently of one another, an integer between 0 and 500, with $x+z$ greater than or equal to 1;

Y is O, S, PH or NH, ~~preferably~~ Θ ; and

R^3 is hydrogen or a saturated or unsaturated, linear or branched, aliphatic, cycloaliphatic or aromatic (C_1-C_{100}) -hydrocarbon residue, ~~preferably~~ (C_4-C_{20}) -hydrocarbon residue, and

C) optionally one or more other at least mono- or polyolefinically unsaturated oxygen-, nitrogen-, sulfur-, phosphorus-, chlorine- and/or fluorine-~~comprising~~ containing comonomers,

ii) at least one pesticide and

iii) at least one inorganic fertilizer.

2. (Original) A plant protection formulation as claimed in claim 1, wherein the comonomer A) is the sodium salt and/or ammonium salt of acrylamidopropylmethylenesulfonic acid (AMPS).

Attorney's Docket: 2001DE454

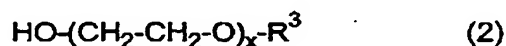
Serial No.: 10/500,025

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

3. (Currently Amended) A plant protection formulation as claimed in claim 1-~~or~~2, wherein
- R^1 is an acryloyl or methacryloyl residue;
- R^2 and R^4 are, independently of one another, C_2 -alkylene or C_3 -alkylene;
- x and z are, independently of one another, an integer between 0 and 50, with x+z greater than or equal to 1;
- R^3 is an aliphatic (C_4 - C_{22})-alkyl or -alkenyl residue, preferably (C_{10} - C_{22})-alkyl or -alkenyl residue; a phenyl residue; a (C_1 - C_{22})-alkylphenyl residue, preferably sec-butyl or n-butylphenyl residue; a poly((C_1 - C_{22})-alkyl)phenyl residue, preferably tris(sec-butyl)phenyl residue or tris(n-butyl)phenyl residue; or a polystyrylphenyl residue, preferably tristyrylphenyl residue.

4. (Original) A plant protection formulation as claimed in claim 3, wherein the R^3 residue is a 2,4,6-tris(sec-butyl)phenyl residue or 2,4,6-tris(1-phenylethyl)phenyl residue.

5. (Currently Amended) A plant protection formulation as claimed in claim 1, wherein the ~~polymers can be at least one polymer~~ is prepared by radical copolymerization of
- A) acrylamidopropylmethylenesulfonic acid (AMPS), the sodium salt of acrylamidopropylmethylenesulfonic acid (AMPS) and/or the ammonium salt of acrylamidopropylmethylenesulfonic acid, preferably the ammonium salt of acrylamidopropylmethylenesulfonic acid (AMPS);
- B) one or more macromonomers ~~chosen~~ selected from the group consisting of the ester esters formed from methacrylic acid or acrylic acid, preferably methacrylic acid, and compounds of the formula (2)



Attorney's Docket: 2001DE454

Serial No.: 10/500.025

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

~~in which wherein~~ x is a number between 1 and 50, particularly preferably 5 and 30, and R³ is a (C₁₀-C₂₂)-alkyl residue; and

- C) optionally one or more comonomers ~~chosen~~ selected from the group consisting of acrylamide, vinylformamide, N-vinylmethyleacetamide, sodium methallylsulfonate, hydroxyethyl methacrylate, acrylic acid, methacrylic acid, maleic anhydride, methacrylamide, vinyl acetate, N-vinylpyrrolidone, vinylphosphonic acid, styrene, styrenesulfonic acid (Na salt), t-butyl acrylate and methyl methacrylate.

6. (Currently Amended) A plant protection formulation as claimed in at least ~~one of claims 1 to 5~~ claim 1, wherein the one or more macromonomers B) are selected from the group consisting of esters formed from acrylic acid or methacrylic acid and alkyl ethoxylates ~~chosen~~ selected from the group consisting of the

(C₁₀-C₁₈)-fatty alcohol polyglycol ethers with 8 EO units, C₁₁-oxo alcohol polyglycol ethers with 8 EO units, (C₁₂-C₁₄)-fatty alcohol polyglycol ethers with 7 EO units, (C₁₂-C₁₄)-fatty alcohol polyglycol ethers with 11 EO units, (C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 8 EO units, (C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 15 EO units, (C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 11 EO units, (C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 20 EO units, (C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 25 EO units, (C₁₈-C₂₂)-fatty alcohol polyglycol ethers with 25 EO units, iso(C₁₆-C₁₈)-fatty alcohol polyglycol ethers with 25 EO units ~~and/or~~ and C₂₂-fatty alcohol polyglycol ethers with 25 EO units.

7. (Currently Amended) A plant protection formulation as claimed in claim 1, wherein the ~~polymers can be at least one polymer~~ is prepared by radical copolymerization of

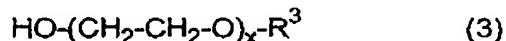
- A) acrylamidopropylmethylenesulfonic acid (AMPS), the sodium salt of acrylamidopropylmethylenesulfonic acid (AMPS) and/or the ammonium

Attorney's Docket: 2001DE454Serial No.: 10/500.025

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

salt of acrylamidopropylmethylenesulfonic acid, ~~preferably the ammonium salt of acrylamidopropylmethylenesulfonic acid (AMPS);~~

- B) one or more macromonomers ~~chosen~~ selected from the group consisting of the esters formed from methacrylic acid or acrylic acid, ~~preferably methacrylic acid,~~ and compounds of the formula (3)



~~in which wherein~~

x is a number between 1 and 50, particularly ~~preferably 5 and 30,~~ and

R³ is a poly((C₁-C₂₂)-alkyl)phenyl residue, ~~preferably tris(see-butyl)phenyl residue or tris(n-butyl)phenyl residue, particularly preferably 2,4,6-tris(see-butyl)phenyl residue, or a tris(styryl)phenyl residue, preferably 2,4,6-tris(1-phenylethyl)phenyl residue; and~~

- C) optionally one or more comonomers ~~chosen~~ selected from the group consisting of acrylamide, vinylformamide, N-vinylmethacetamide, sodium methallylsulfonate, hydroxyethyl methacrylate, acrylic acid, methacrylic acid, maleic anhydride, methacrylamide, vinyl acetate, N-vinylpyrrolidone, vinylphosphonic acid, styrene, styrenesulfonic acid (Na salt), t-butyl acrylate and methyl methacrylate.

8. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 7~~ claim 1, wherein the proportion of the one or more macromonomers B) in the ~~polymers at least one polymer~~ polymers is 50.1 to 99.9% by weight, ~~preferably 70 to 95% by weight, particularly preferably 80 to 94% by weight.~~

9. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 7,~~ claim 1, wherein the proportion of the one or more macromonomers B) in the ~~polymers at least one polymer~~ polymers is 0.1 to 50% by weight, ~~preferably 5 to 25% by weight, particularly preferably 6 to 20% by weight.~~

Attorney's Docket: 2001DE454

Serial No.: 10/500,025

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

10. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 9~~claim 1, wherein the number-average molecular weight of the ~~polymers~~at least one polymer is 1000 to 20 000 000 g/mol; preferably 20 000 to 5 000 000 g/mol, particularly preferably 50 000 to 4 500 000 g/mol.
11. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 10~~claim 1, wherein the ~~polymers are~~at least one polymer is crosslinked.
12. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 11~~claim 1, wherein the radical copolymerization being is a precipitation polymerization reaction, preferably in tert-butanol.
13. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 12~~claim 1, ~~comprising~~based on the a ready-mix formulation, 0.01 to 10% by weight, preferably 0.01 to 5% by weight, of polymers of the at least one polymer.
14. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 13~~claim 1, further comprising water and wherein the water content, based on ~~the a~~a ready-mix formulation, is 5 to 60% by weight, preferably 5 to 50% by weight, particularly preferably 5 to 30% by weight.
15. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 14~~claim 1, wherein the solubility in water of the ~~pesticides~~at least one pesticide is greater than 800 g/l, preferably greater than 1000 g/l.
16. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 15~~claim 1, wherein the ~~pesticides are~~at least one pesticide is an ionogenic ~~pesticides~~pesticide.

Attorney's Docket: 2001DE454Serial No.: 10/500,024

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

17. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 16~~claim 1, wherein the ~~pesticides are~~at least one pesticide is glyphosate, sulphosate and/or glufosinate.
18. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 17~~claim 1, wherein the proportion of ~~pesticides~~the at least one pesticide, based on the ~~a~~ ready-mix formulation, is 5 to 85% by weight, preferably 25 to 60% by weight.
19. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 18~~claim 1, wherein the ~~at least one inorganic fertilizers are~~fertilizer is an ammonium salts and/or phosphates salt or a phosphate.
20. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 19~~claim 1, wherein the proportion of ~~the at least one inorganic fertilizers~~fertilizer, based on the ~~a~~ ready-mix formulation, is 5 to 85% by weight, preferably 25 to 60% by weight.
21. (Currently Amended) A plant protection formulation as claimed in ~~at least one of claims 1 to 20, which~~claim 1, wherein the plant protection formulation is free from ~~of~~ organic solvents.
22. (Currently Amended) A plant protection formulation as claimed ~~in at least one of claims 1 to 21, which~~claim 1, wherein the plant protection formulation is a soluble liquid (SL) or a soluble concentrate.
23. (Original) A plant protection formulation as claimed in claim 1, wherein $5 \leq x + z \leq 50$.
24. (New) A plant protection formulation as claimed in claim 1, wherein Y is oxygen.

Attorney's Docket: 2001DE454
Serial No.: 10/500.025

Response to Notice of Non-Compliant Amendment mailed March 11, 2005

25. (New) A plant protection formulation as claimed in claim 1, wherein R³ is a (C₁-C₃₀)-hydrocarbon residue.
26. (New) A plant protection formulation as claimed in claim 3, wherein R³ is a (C₁₀-C₂₂)-alkyl or -alkenyl residue.
27. (New) A plant protection formulation as claimed in claim 3, wherein R³ is a sec-butyl- or n-butylphenyl residue.
28. (New) A plant protection formulation as claimed in claim 3; wherein R³ is a tris(sec-butyl)phenyl residue or tris(n-butyl)phenyl residue.
29. (New) A plant protection formulation as claimed in claim 3, wherein R³ is a tristyrylphenyl residue.
30. (New) A plant protection formulation as claimed in claim 5, wherein the comonomer A) is the ammonium salt of acrylamidopropylmethylenesulfonic acid.
31. (New) A plant protection formulation as claimed in claim 5, wherein the one or more macromonomers B) is an ester formed from methacrylic acid.
32. (New) A plant protection formulation as claimed in claim 5, wherein x is between 5 and 30.
33. (New) A plant protection formulation as claimed in claim 7, wherein the comonomer A) is the ammonium salt of acrylamidopropylmethylenesulfonic acid.
34. (New) A plant protection formulation as claimed in claim 7, wherein the one or more macromonomers is an ester formed from methacrylic acid.
35. (New) A plant protection formulation as claimed in claim 7, wherein x is between 5 and 30.

Attorney's Docket: 2001DE454Serial No.: 10/500,025Response to Notice of Non-Compliant Amendment mailed March 11, 2005

36. (New) A plant protection formulation as claimed in claim 7, wherein R³ is a tris(sec-butyl)phenyl residue or tris(n-butyl)phenyl residue.
37. (New) A plant protection formulation as claimed in claim 7, wherein R³ is a 2,4,6-tris(sec-butyl)phenyl residue.
38. (New) A plant protection formulation as claimed in claim 7, wherein R³ is a 2,4,6-tris(1-phenylethyl)phenyl residue.
39. (New) A plant protection formulation as claimed in claim 1, wherein the proportion of the one or macromonomers B) in the at least one polymer is 70 to 95% by weight.
40. (New) A plant protection formulation as claimed in claim 1, wherein the proportion of the one or more macromonomers B) in the at least one polymer is 80 to 94% by weight.
41. (New) A plant protection formulation as claimed claim 1, wherein the proportion of the one or more macromonomers B) in the at least one polymer is 5 to 25%.
42. (New) A plant protection formulation as claimed claim 1, wherein the proportion of one or more macromonomers B) in the at least one polymer is 6 to 20%.
43. (New) A plant protection formulation as claimed in claim 1, wherein the number-average molecular weight of the at least one polymer is 20 000 to 5 000 000 g/mol.
44. (New) A plant protection formulation as claimed in claim 1, wherein the number-average molecular weight of the at least one polymer is 50 000 to 1 500 000 g/mol.

Attorney's Docket: 2001DE454Serial No.: 10/500.025Response to Notice of Non-Compliant Amendment mailed March 11, 2005

45. (New) A plant protection formulation as claimed in claim 12, wherein the precipitation polymerization reaction occurs in tert-butanol.
46. (New) A plant protection formulation as claimed in claim 1, comprising, based on a ready mixed formulation, 0.01 to 5% by weight of the at least one polymer.
47. (New) A plant protection formulation as claimed in claim 1, further comprising water and wherein the water content, based on a ready-mix formulation, is 5 to 50% by weight.
48. (New) A plant protection formulation as claimed in claim 1, further comprising water and wherein the water content, based on a ready-mix formulation, is 5 to 30% by weight.
49. (New) A plant protection formulation as claimed in claim 1, wherein the solubility in water of the at least one pesticide is greater than 1000 g/l.
50. (New) A plant protection formulation as claimed in claim 1, wherein the at least one pesticide, based on a ready-mix formulation is 25 to 60% by weight.
51. (New) A plant protection formulation as claimed in claim 1, wherein the at least one inorganic fertilizer, based on a ready-mix formulation, is 25 to 60% by weight.